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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------|-------------|----------------------|-------------------------|------------------|
| 09/973,628 | 10/09/2001 | Naoki Matsuoka | FUJI 19.063 | 6281 |
| 26304 | 7590 | 06/03/2005 | EXAMINER | |
| KATTEN MUCHIN ROSENMAN LLP | | | HEINRICH, CHRISTOPHER P | |
| 575 MADISON AVENUE | | | | |
| NEW YORK, NY 10022-2585 | | | ART UNIT | PAPER NUMBER |
| | | | 2663 | |

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|---------------------------------------------|-------------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/973,628 | MATSUOKA ET AL. | |
| | Examiner Christopher P. Heinrichs | Art Unit 2663 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 09 October 2001.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-14 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-14 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 09 October 2001 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>10/9/2001</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figures 1A-1C and 2A-2C should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-14 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6,836,479 to Sakamoto et al.

2. With regard to claims 1-4, Sakamoto discloses a scheduling apparatus comprising scheduling processing means (figure 17) for processing scheduling processes (figs 19 and 20) of all input lines (fig 17, lines connected on left of items 102)

according to a processing sequence (priority transmission, col 7 line 52) in which a highest priority output line (fig 2 item 65-1H, arrow extending from right end) of a highest priority input line (fig 2 item 65-1H, arrow extending from left end) is processed with a first priority (col 7 lines 60-64 and col 8 lines 1-4) in an environment in which a plurality of processing sequences (the above decision is made for fig 2, which is an embodiment of fig 1 items 3-1 to 3-n, and the plurality of processing sequences is the priority transmission decision, described above, made for each of the plurality of units 3-1 to 3-n) have different scheduling targets (each of fig 2 items 65-1H and 65-1L have, as their scheduling target, output interface 1 as noted in col 7 lines 60-64, and they constitute a group, and fig 2 depicts a plurality of groups each with a different scheduling targets as described in col 5 lines 2-4, wherein a scheduling target is an output interface) among a plurality of input lines (noted above), and priority line updating means (fig 2 items 60 and 66 and fig 1 item 61) for updating the highest priority input line and the highest priority output line of each input line (col 6 line 66 – col 8 line 1, wherein the updating is performed via the priority decision when the packet has high priority, the highest of the two queues 65-1H and 65-1L, and as noted in the col 8 lines 1-4 reference the queue with a high priority is selected before a queue with a low priority, updating the output line of that queue by transferring the packet over it from it) for every scheduling cycle (arrival of a packet at leftmost input line arrow of fig 2). The above noted references state that a packet exists in the input line when the updating is executed. The above describes an apparatus that performs the method of claims 1 and 2.

3. With regard to claim 5, Sakamoto discloses all aspects of the apparatus of claim 4 and further discloses that the priority line updating means does not update the highest priority output line of each input line when updating the highest priority output line if the highest priority output line cannot be scheduled (fig 20 describes a process in which the packet to be transmitted to an output interface, hence updating the highest priority output line noted in the rejection of claims 1 and 4 by transferring the packet over it from its corresponding queue, is only transmitted if the output interface identifies a "free condition" (col 8 lines 20-30).

4. With regard to claim 6, Sakamoto discloses all aspects of the apparatus of claim 4 and further discloses that the priority line updating means updates the highest priority output line of each input line (as set forth in the rejection of claim 3) by selecting a priority line (fig 2, arrow protruding from right of item 65-1H as set forth in the rejection of claim 3) within the output lines with priority over a non-priority line (fig, arrow protruding from right of item 65-1L as set forth in the rejection of claim 3, which does not have priority of the two and is hence non-priority) within the output lines (both arrows).

5. With regard to claim 7, Sakamoto discloses all aspects of the apparatus of claim 6 and further discloses that said scheduling processing means independently manages (fig 20 item 110 shows an independent decision) by selecting the highest priority output line (line protruding from top of decision 110) with respect to the priority line (represented by leftmost item 112 as it corresponds to arrow protruding from right of

item 65-1H) and the non-priority line (represented by leftmost item 113, as described in col 8 lines 25-26, as it corresponds to arrow protruding from right of item 65-1L).

6. With regard to claim 8, Sakamoto discloses all aspects of the apparatus of claim 6 and further discloses that said scheduling processing means collectively (via collection of decisions 114 and 110 of fig 20) manages the highest priority output line (line protruding from top of decision 110) with respect to the priority line (represented by leftmost item 112 as it corresponds to arrow protruding from right of item 65-1H) and the non-priority line (represented by leftmost item 113, as described in col 8 lines 25-26, as it corresponds to arrow protruding from right of item 65-1L).

7. With regard to claim 9, Sakamoto discloses all aspects of the apparatus of claim 6 and further discloses that said scheduling processing means carries out a scheduling (using WRR described in col 8 lines 8-14 and executed in fig 20 as set forth in col 8 lines 22-27) with respect to the non-priority line after carrying out a scheduling with respect to the priority line in a first half of a scheduling cycle (first half of cycle described in fig 20 leftmost item 114 and item 110, second half of the cycle described by rightmost item 114 and item 110, wherein the "deciding the output packet" is the scheduling, and the second half will happen after the first half as it includes the lower priority packet).

8. With regard to claim 10, Sakamoto discloses all aspects of the apparatus of claim 6 and further discloses that said scheduling processing means carries out a scheduling

(deciding surviving packet among packets to be transmitted, items 114 of fig 20) with respect to the priority line and non-priority line in parallel (fig 20 shows parallel decisions 114), and selects a scheduling result of the priority line (result of fig 20 item 110) with priority when a contention is generated between the scheduling result of the priority line and a scheduling result of the non-priority line (WRR described in col 8 lines 8-14 and executed in fig 20 as set forth in col 8 lines 22-27, and WRR is executed as set forth in col 6 lines 45-48, when plurality of packets contend by having the same priority).

9. With regard to claim 11, Sakamoto discloses all aspects of the invention of claim 4 and further discloses that the priority line updating means selects and updates a high priority group (fig 20 items 112, as described in col 8 lines 22-24) within the output lines (fig 2, arrows protruding from right of items 65-1H, 65-1L, 65-2H, 65-2L...65-nH, 65-nL) with priority over (high priority has priority over low priority) a low priority group (fig 20 items 113, as described in col 8 lines 25-26) within the output lines when updating the highest priority output line of each input line (update of the output line is transmitting over that line, and the fig 20 algorithm decides which is to transmit first).

10. With regard to claim 12, Sakamoto discloses all aspects of the apparatus of claim 11 and further discloses in fig 20 that the leftmost item 114 shows an independent decision managing the highest priority output line (line protruding from the top of item 114) with respect to the high priority group (items 112) and the low priority group (items

113, output of leftmost item 114 is highest priority of high priority group, which will have a higher priority with respect to low priority group).

11. With regard to claim 13, Sakamoto discloses all aspects of the apparatus of claim 11 and further discloses that said scheduling processing means collectively manages the highest priority output line with respect to the high priority group and the low priority group, as the collection of decisions 110 and 114 result in deciding the surviving output packet by full priority scheduling, resulting in one highest priority packet from the highest priority output line emerging from the collection of decisions, said packet being represented by the line protruding from the top of item 110).

12. With regard to claim 14, Sakamoto discloses a scheduling apparatus comprising scheduling processing means (figure 17) for processing scheduling processes (figs 19 and 20) of all input lines (fig 17, lines connected on left of items 102) according to a processing sequence (priority transmission, col 7 line 52) in which a highest priority input line (fig 2 item 65-1H, arrow extending from left end) of a highest priority output line (fig 2 item 65-1H, arrow extending from right end) is processed with a first priority (col 7 lines 60-64 and col 8 lines 1-4) in an environment in which a plurality of processing sequences (the above decision is made for fig 2, which is an embodiment of fig 1 items 3-1 to 3-n, and the plurality of processing sequences is the priority transmission decision, described above, made for each of the plurality of units 3-1 to 3-n) have different scheduling targets (each of fig 2 items 65-1H and 65-1L have, as their

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scheduling target, output interface 1 as noted in col 7 lines 60-64, and they constitute a group, and fig 2 depicts a plurality of groups each with a different scheduling targets as described in col 5 lines 2-4, wherein a scheduling target is an output interface) among a plurality of input lines (noted above), and priority line updating means (fig 2 items 60 and 66 and fig 1 item 61) for updating the highest priority output line and the highest priority input line of each output line (col 6 line 66 – col 8 line 1, wherein the updating is performed via the priority decision when the packet has high priority, the highest of the two queues 65-1H and 65-1L, and as noted in the col 8 lines 1-4 reference the queue with a high priority is selected before a queue with a low priority, updating the output line of that queue) for every scheduling cycle (arrival of a packet at leftmost input line arrow of fig 2). The above noted references state that a packet exists in the input line when the updating is executed.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Ku et al (US-PGPUB 2002/0085565), Technique for Time Division Multiplex Forwarding of Data Streams.

b. Kalkunte et al (US-PGPUB 2003/0128707), Servicing Output Queues Dynamically According to Bandwidth Allocation in a Frame Environment

c. Duan et al (US 5,923,656) Scalable Broad Band Input-Queued ATM

Switch Including Weight Driven Cell Scheduler

d. Han et al (US 6,633,568) Two-Dimensional Round-Robin Scheduling

Method with Multiple Selection in an Input-Buffered Switch

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Heinrichs whose telephone number is 571-272-8397. The examiner can normally be reached on Monday through Friday, 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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PRIMARY EXAMINER

8/1/05